Grantee Report to Richard King Mellon Foundation

Grantee: County of Allegheny, Department of Human Services
Award Date: April 14, 2014
Amount: $1.5 million
Project: Technology Improvements
Grant ID: 7432
Director: Marc Cherna
Due Date: 3/31/18

1. *Based upon the outcomes outlined in your proposal, DHS expects to implement new technology and systems which will improve processes and client outcomes through development of a client portal, a provider portal, and predictive analytic tools. How successful was the organization at achieving this outcome?*

The grant was used to support two technology innovations: 1) development and implementation of Client View, an online portal that provides integrated client service data to DHS staff, providers and clients and 2) development and implementation of the Allegheny Family Screening Tool (AFST), a predictive risk model designed to improve child welfare call screening decision-making. Responses are provided individually for each.

<u>Client View</u> (provider and client portals): Client View supports DHS's ongoing mission to improve care for Allegheny County residents through the collection and provision of a more comprehensive human services client record used to integrate and coordinate care across human services. So ultimately, DHS has built a tool that serves as a model for other counties across the nation, demonstrating the value of integrated data to support the provision of services to vulnerable individuals. As of March 2018, DHS has developed and implemented the core functionality of Client View, and also completed a development initiative to further enhance functionality for its users.

The Client View application is available to DHS front-line staff, to support their daily service activities and service coordination for clients, and administrators who oversee and manage these programs. It further provides direct access to client information for DHS-contracted service providers, giving them the ability to access comprehensive information about the clients they serve.

Broadly, Client View includes information about the following areas of DHS service:
- Homeless and Housing Supports
- Mental Health Services – county and managed care-funded
- Child Welfare Services for both parents and children, including prevention and diversion services
- Aging Services
- Early Intervention

- Independent Living Services for Young Adults
- Criminal Justice Re-entry Services
- Medical Assistance Transportation
- Intellectual Disability
- Family Support Centers
- Head Start

Note: Because of D&A regulations, Drug and Alcohol service information is available to DHS staff but not providers.

It also includes information about the following external non-DHS programs:
- Juvenile Probation
- Allegheny County Jail
- Allegheny County and Pittsburgh Housing Authorities
- School Enrollment (Approximately 14 districts including Pittsburgh Public Schools)
- Medical Examiner
- Public Benefits – SNAP, TANF, SSI, Other Medical (Commonwealth of PA)
- Birth Records (Allegheny County Health Department)

We continue to add to the list of data sources integrated within our Data Warehouse and displayed within Client View. We recently integrated 9-1-1 emergency call data into Client View, and anticipate receiving employment and unemployment compensation data from the PA Department of Labor and Industry.

For users, Client View is conveniently linked to DHS's transactional source systems. Staff and providers can click on hyperlinked client IDs within those systems to be seamlessly directed into that client's record without having to re-enter their password, manually open the application, or search for the desired client.

Within Client View, they can view a detailed list of services displayed by date, program area and service type. Users can also view these services organized in a timeline so they can see

activity across multiple program areas summarized by month or year.

Additionally, Client View provides access to electronic client documents such as petitions for dependency, school records and child permanency plans. It also provides access to client plans and assessment such as Family Plans, ANSA and CANS assessments. Having this information available to front-line staff eases the burden on clients to continually retell their story, and reduces inefficiencies and redundancies in the front-end information collection that intake and service staff must do.
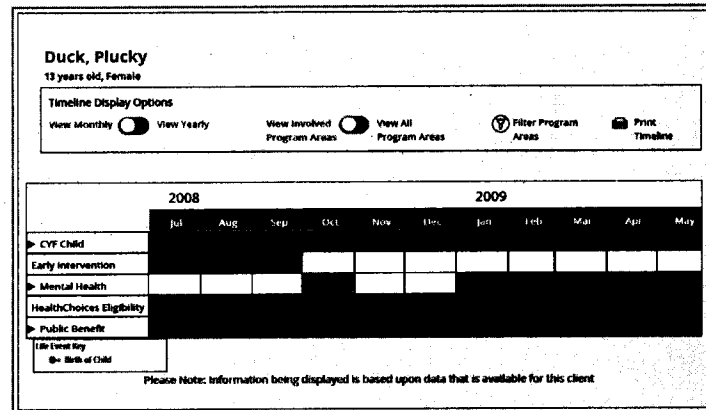
While the data contained in Client View are valuable for DHS and provider staff, DHS also recognizes that clients, and the families that support them, are often in the best position to coordinate their own care. For this reason, and to provide transparency around the information we collect, Client View also provides access for clients to view their own records and use that information to support

their service needs and decisions. This access is built upon a partnership with the Commonwealth of Pennsylvania to link Client View with the client accounts for Pennsylvania's public benefits system, COMPASS. Because of this collaboration, DHS clients (many of whom also receive these public benefits) can use their existing COMPASS accounts (username and password) to also access Client View. They can get access to their records in Client View either directly from staff within DHS or from their service providers. A pin number and a document with directions on how to create and access the account is provided directly from within the Client View system.
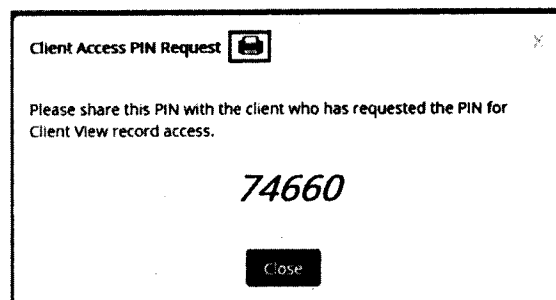
As of March 2018, the rollout of Client View to DHS's providers is complete, but additional sessions are still being scheduled by request. DHS has provided an hour-long in-person training and an electronic user guide to each provider. Most users, however, find the interface to be intuitive enough that using the system has not proved to be difficult. Both the documentation and the training provide guidance on how to give access to clients. Client View can provide a convenient first step to initiating a conversation about a client's service history, identifying potential service needs and strategizing next steps.

Client View has been well-received by the provider agencies, and we have seen a lot of enthusiasm surrounding the use of the system and being able to incorporate this new tool into their business processes.

DHS has implemented some additional enhancements to Client View, which include the previously mentioned timeline view, as well as:

- Improvements in the ability to search for clients and to search by client address
- Ability to view emergency call data related to client addresses
- Ability to connect with Pictometry data to view a location map and display oblique images of buildings and residences
- Improved capabilities for DHS's Client View administrator, including the ability to conduct audit surveys and campaigns to verify and enforce appropriate use of the system
- Greater capacity to download service records
- Additional data sources including diagnoses, Health Choices eligibility and MA recipient information

These enhancement, as well as many others, have been successfully incorporated into Client View and have been well received by internal staff and provider users. Additional changes being implemented include pulling in demographics from Health Department birth records and adding the district to the school records.

Predictive Analytics: In August 2016, DHS implemented The Allegheny Family Screening Tool (AFST), a predictive risk model designed to improve call screening decision-making in the county's child welfare office. The AFST is the result of a two-year process of exploration, research, ethical analysis and training.

DHS began the process with a Request for Proposals, through which a research team led by the Auckland University of Technology was selected to investigate opportunities for the use of predictive analytics in child welfare.

The AFST calculates a Family Screening Score by integrating and analyzing hundreds of data elements on each person related to a child welfare referral. The score predicts the long-term likelihood of re-referral, if the referral is screened out without an investigation, or home removal, if the referral is screened in for investigation. If the Family Screening Score meets the threshold for "mandatory screen-in," the call must be investigated. In all other circumstances, the Family Screening Score provides additional information – in conjunction with clinical decision making – to assist call screening staff in making a call screening decision. Because It is only intended to inform call screening

decisions and is not to be used in making investigative or other child welfare decisions, the score is available only to call screening staff.
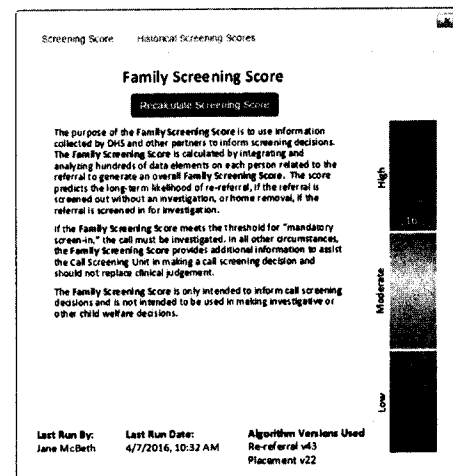
DHS published a report on the AFST and its development. This publication consists of three documents: 1) Developing Predictive Risk Models to Support Child Maltreatment Hotline Screening Decisions: Allegheny County Methodology and Implementation; 2) Ethical Analysis: Predictive Risk

Models at Call Screening for Allegheny County; and 3) DHS's response to the Ethical Analysis. Together, they provide a look at the development and implementation of the AFST. It can be found at Developing Predictive Risk Models to Support Child Maltreatment Hotline Screening Decisions. This publication also includes a Q&A document developed to provide answers to what we think will be the most common questions about the development and implementation of the AFST.

2. *How has the organization evaluated the program? Based on the evaluation, is DHS implementing any changes?*

Client View: We continue to evaluate the Client View application on an ongoing basis, making changes to functionality to meet the needs of internal users and providers. It is still early in the implementation to measure the level of adoption by providers. Based on our experience with the internal rollout and implementation of both Datavue (Client View's predecessor) and Client View, we know that integrating the use of similar systems into business processes often takes several years. We anticipate doing further targeted user satisfaction surveys to gather feedback on the utility, usability and functionality of the system and to identify areas for improvement.

Predictive Analytics: Both a process and an impact evaluation were conducted. Through a Request for Proposals, Evaluation of a Predictive Risk Modeling Tool for Improving the Decisions of Child Welfare Workers, Hornby-Zeller Associates was selected to conduct the process evaluation and Stanford University to conduct the impact evaluation. These evaluations were funded by Casey Family Programs, the Human Services Integration Fund and DHS.

The process evaluation was designed to assess the implementation process and the impact of screening scores on decision-making, through a combination of interviews, surveys and document reviews. Key questions included:
- How has the tool modified the experience of call screeners?
- What are the practice and policy implications?
- What are perceptions and reactions to the tool?
- How extensive were preparations for development of the model?

The process evaluation report, which can be read at AFST Process Evaluation, found that:

- The Predictive Risk Modeling Tool is facilitating data-driven decision-making with Allegheny County staff, but there is further room for system-level change.
- Call screening staff report having a good understanding of the AFST, but are mixed on how confident they are in the resulting scores.
- Call screen staff generally find the AFST easy to use, and offered technical suggestions for improving the Tool's user experience.

The impact evaluation, which has been extended to include modifications made since implementation, will measure the impact of the AFST on: accuracy of decisions; reduction in unwarranted variation in decision-making; reduction in disparities and; overall referral rates and workload. It will assess the following outcomes:
- Rate of screen in

- Likelihood of "bad" screen-outs
- Likelihood of unnecessary screen-ins
- Unwarranted variation in screening decisions
- Disparity in screening decision

The outcomes of these evaluations are being used to inform adjustments to the model. The evaluations and Frequently-Asked Questions about the evaluations will be posted on our website.

3. *How has the project impacted the strength and/or effectiveness of the organization?*

Both Client View and Predictive Analytics support DHS's mission of furthering data-driven decision making to improve the quality and impact of client services. With this grant, we made significant strides in how we use our integrated data to improve client services and expand access to information. Client View, by facilitating greater access to a person's complete service history, will improve the coordination of care for individuals within the human services system. The Allegheny Family Screening Tool helps DHS serve the County's children more effectively by providing call screeners with more information and helping them to make better informed clinical decisions about the disposition of referrals.

Our use of predictive analytics has received a significant amount of attention, both locally and nationally. Below is a selection of links to existing coverage:

- Actionable Intelligence
  This video, produced by University of Pennsylvania's Actionable Intelligence for Social Policy, highlights the Allegheny Family Screening Tool as one of the projects across the country that use integrated data systems (IDS) to improve social programs.
- Can an Algorithm Tell When Kids Are in Danger?
  This New York Times article takes an in-depth look at Allegheny County's use of predictive analytics. This article also appeared in the Irish Examiner.
- Can Big Data Help Save Abused Kids?
  This Reason article discusses efforts to use predictive analytics in preventing child abuse.
- How Machine Learning Can Improve Public Sector Services
  Published by The Regulatory Review in October 2017, this article discusses how Allegheny County government digitized its records and uses big data analysis to improve health and human services.
- Predictive Analytics in Child Welfare
  Published by the U.S. Department of Health and Human Services Office of the Assistance Secretary for Planning and Evaluation in November 2017, this report examines the potential benefits and pitfalls of predictive analytics and provides advice for progress.
- Predictive Analytics in the Child Welfare System, Starting with the Basics
  Hosted by the Alliance for Racial Equity in Child Welfare and the Center for the Study of Social Policy. This webinar discusses the development and use of predictive analytics in child welfare.

- Using Integrated Data Systems (IDS) in County Government
  Four Annie E. Casey Foundation reports explore the value of using Integrated Data Systems to improve outcomes for individuals and families.
- Pennsylvania County Leads in Use of Big Data to Stem Child Abuse, Probes Ethics First, The Chronicle of Social Change, May 26, 2017
- Keeping kids safe: A smart new tool helps county see if a child is at risk. Pittsburgh Post-Gazette, April 13, 2017
- Allegheny County DHS using algorithm to assist in child welfare screening, Pittsburgh Post-Gazette, April 10, 2017
- Managing the Flow: Predictive Analytics in Child Welfare, Chronicle of Social Change, April 6, 2017
- Policy and Practice Changes Form Around National Strategy to Reduce Fatalities and Improve Child Safety, the Chronicle of Social Change, February 24, 2017
- Predictive Analytics in the Child Welfare System, Starting with the Basics, a webinar hosted by the Alliance for Racial Equity in Child Welfare and the Center for the Study of Social Policy.

4. *What is the status of the project?*

   For both projects, the technology portion requested in the grant has been completed, although implementation monitoring, continuous quality improvement and evaluation will continue.

   Client View: While the rollout and training for ClientView will likely diminish over the next few years, efforts to maintain and enhance ClientView will continue. Every time we make a change to the data warehouse, including adding a new source, we will update ClientView.

   Predictive Analytics: the AFST has been in operation since 2016 and will likely be ongoing for several years as we fine tune the modeling.

5. *What impact has this project had on the overall sustainability of the organization?*

   We anticipate that both projects will result in more effective allocation of resources, better use of data and improved client outcomes.
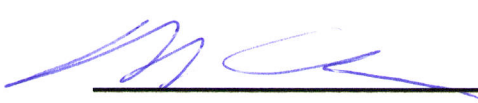
6. *Overall, how has the organization progressed toward long-term sustainability?*

   Through technological innovations like Client View and the AFST, DHS continues to improve integrated, coordinated care for clients while focusing efforts and funds on the clients most in need.
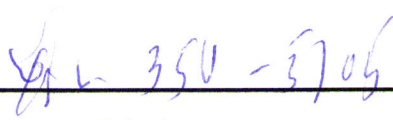
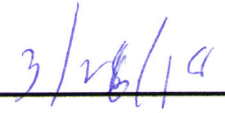7. *Audited financial statements for 2015:*
   http://info.alleghenycounty.us/WorkArea/DownloadAsset.aspx?id=5256

I certify that this grant was used for the purpose designated in the grant application (Technology Improvements).

_____   412 350-3706   3/26/19
Marc Cherna, Director   Telephone   Date

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